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Two New Species of the Genus *Tachinus* (Coleoptera, Staphylinidae) from the Ryukyu Islands, Southwest Japan

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Abstract Two new staphylinid beetles belonging to the subgenus *Tachinoderus* MOTSCHULSKY, 1857 of the genus *Tachinus* GRAVENHORST, 1802 are described under the names of *T. (Tachinoderus) naomii* and *T. (Tachinoderus) iriomotensis*. The former is collected from Amami-Oshima Island and the latter from Iriomote Island, both of the Ryukyu Islands, Southwest Japan. Diagnostic characters are illustrated.

Key words: Staphylinidae; *Tachinus*; *Tachinoderus*; new species; Japan.

Through the courtesy of Dr. S.-I. NAOMI, I have had an opportunity to examine a number of specimens of the genus *Tachinus* GRAVENHORST, 1802. Among them, I have found two species of the subgenus *Tachinoderus* MOTSCHULSKY, 1857 collected from Amami-Oshima Island and Iriomote Island, both belonging to the Ryukyu Archipelago that stretches between Taiwan and Japan. As the result of careful examination, it has become clear that they do not agree with the known species of the subgenus *Tachinoderus* in configuration of the secondary sexual character of abdomen and genital organ in the male. They are new to science, and will be described in the present paper. The type series of the two new species are deposited in the Natural History Museum and Institute, Chiba, and Dr. NAOMI's collection.

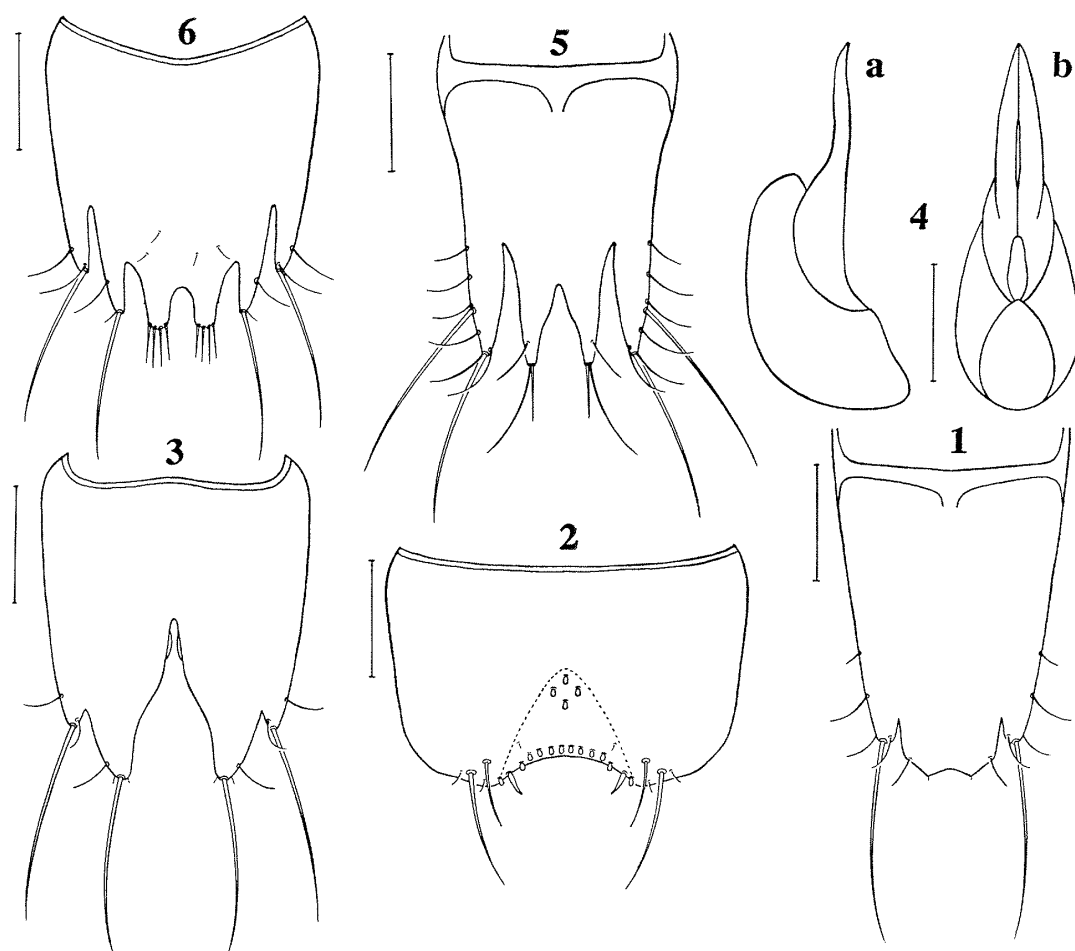
Before going further, I wish to express my sincere gratitude to Prof. M. MIYATAKE, Assoc. Prof. N. OHBAYASHI, Entomological Laboratory, and Dr. M. SAKAI, Department of Parasitology, Ehime University, for their kind and continuous guidance and encouragement on the present study, and for critical reading of the manuscript. My hearty thanks are due to Dr. S.-I. NAOMI, Natural History Museum and Institute, Chiba, for his kindness in giving me the opportunity to study on the interesting species and valuable advice on the present study.

Tachinus (Tachinoderus) naomii sp. nov.

(Figs. 1–6)

Length: 1.8–2.1 mm (from the anterior margin of labrum to the apices of elytra); width: 1.1–1.3 mm.

Male. Body small, oval. Color piceous to reddish brown, shining; antennae, mouthparts, legs, lateral and posterior margins of pronotum, humeri and posterior



Figs. 1–6. *Tachinus (Tachinoderus) naonii* sp. nov. — 1, Male 8th tergite; 2, male 7th sternite; 3, male 8th sternite; 4, male genitalia (a, lateral view; b, ventral view); 5, female 8th tergite; 6, female 8th sternite. (Scale: 0.25 mm).

margins of elytra, and posterior margins of tergites light reddish brown.

Head small, about 0.56 times as wide as pronotum, moderately punctate, without microsculpture except at the base. Eye moderately large and convex; ocular seta obsolete. Antenna long, exceeding the posterior margin of pronotum, with 1st to 3rd segments glabrous except for a few long setae, 4th segment sparsely, and 5th to 11th segments densely pubescent; relative length of each segment from base to apex: 13: 11: 12: 10: 10: 10: 10: 9: 9: 14; 10th segment as wide as long. Maxillary palpus fairly long, with relative lengths of 4th and 3rd segments: 13: 7.

Pronotum about 0.54 times as long as wide, widest near basal third; anterior margin bisinuate; lateral margins arcuate from base to apex; posterior margin slightly and roundly produced behind; posterior angles blunt; surface with punctures similar to those on head, and without microsculpture. Scutellum parabolic, with punctures as those on pronotum, and densely microsculptured on the disc.

Elytra in sutural length about 1.40 times as long as the median length of pronotum, 0.74 times as long as wide, widest near basal third; sides slightly convergent apicad; posterior conjoint margins shallowly emarginate at the middle; apical angles somewhat sharp; surface very coarsely punctate, and without microsculpture.

Abdomen triangular, rather strongly narrowed from base to apex; surface sparsely and evenly covered with fine pubescence; punctures somewhat finer than those on elytra, microsculpture reduced, obscurely visible only at the base of 3rd tergite. Third tergite with a pair of distinct pruinose spots near the middle. Third sternite with a short longitudinal keel at the base.

Legs moderately long; anterior tibia about 0.71 times as long as femur; pro-tarsal segments 1–4 dilated.

Eighth tergite (Fig. 1) with middle lobes fused each other, shallowly emarginate at apex; lateral lobes short, narrowly separated from middle lobe. Fifth and sixth sternites triangularly depressed at middle in posterior part. Seventh sternite (Fig. 2) broadly and subtriangularly impressed at middle in posterior part; apical margin moderately and roundly emarginate, subtriangular impression covered with a row of granules along the apical margin, and a small patch of granules at the base. Eighth sternite (Fig. 3) with apical margin deeply emarginate, the depth about 0.56 times as long as the length of sternite, base of the emargination without lateral setae; inner lobes robust, gradually narrowed towards apices; outer lobes small. Genitalia (Fig. 4) with median lobe somewhat gradually narrowed and thinned apically; lateral lobes moderately long, with apical portion strongly tapered, and slightly curved ventrad.

Female. Eighth tergite (Fig. 5) with inner lobes a little longer than outer lobes, apical margin between inner lobes deeply emarginate; apex of each inner lobe with 3 bristles; outer lobes long, each with 2 long and 6 short bristles along the external side. Eighth sternite (Fig. 6) with inner lobes separated by a U-shaped emargination, fimbriate and rounded at apices, each about twice as wide as intermediate lobe in apical width.

Type series. Holotype: ♂, allotype: ♀, Mt. Yuwan, Amami-Oshima, Kagoshima Pref., Japan, 11. V. 1983, S. NOMURA leg. Paratypes: 1 ♂, 1 ♀, same data as for the holotype; 3 ♂♂, 1 ♀, same locality as for the holotype, 20. VI. 1980, S. IMASAKA leg.; 2 ♂♂, Santarotoge, Amami-Oshima. Kagoshima Pref., 29. VI. 1981, K. OGATA leg.; 5 ♂♂, 5 ♀♀, Hatsuno, Amami-Oshima. Kagoshima Pref., 27. III. 1978, S.-I. NAOMI leg.; 1 ♂, 1 ♀, Yuidake, Amami-Oshima, Kagoshima Pref., 14. V. 1983, S. NOMURA leg.; 1 ♀, Mt. Yuwan, Amami, Kagoshima Pref., 8. V. 1987, S. NOMURA leg.; 1 ♀, Setouchi, Amami-Oshima, Kagoshima Pref., 18. III. 1980, S. TANAKA leg.; 2 ♂♂, 3 ♀♀, Chuohrindoh, Amami-Oshima, Kagoshima Pref., 18. VI. 1980, S. IMASAKA leg.; 2 ♂♂, 2 ♀♀, Nishi-nakama, Amami-Oshima, Kagoshima Pref., 6. VI. 1980, H. MAKIHARA leg.; 1 ♂, Yamatohama, Amami-Oshima, Kagoshima Pref., 24. III. 1978, S.-I. NAOMI leg.

Distribution. Japan (Amami-Oshima).

Remarks. This new species can be readily distinguished from the other members of the subgenus *Tachinoderus* by the following characters: the male 7th sternite with a row of granules along the apical margin, and a small patch of granules at the base of the triangular impression; the lateral lobes of male genitalia with apical halves strongly narrowed; and the lateral lobes of female 8th tergite with 2 long and 6 short bristles along each external margin.

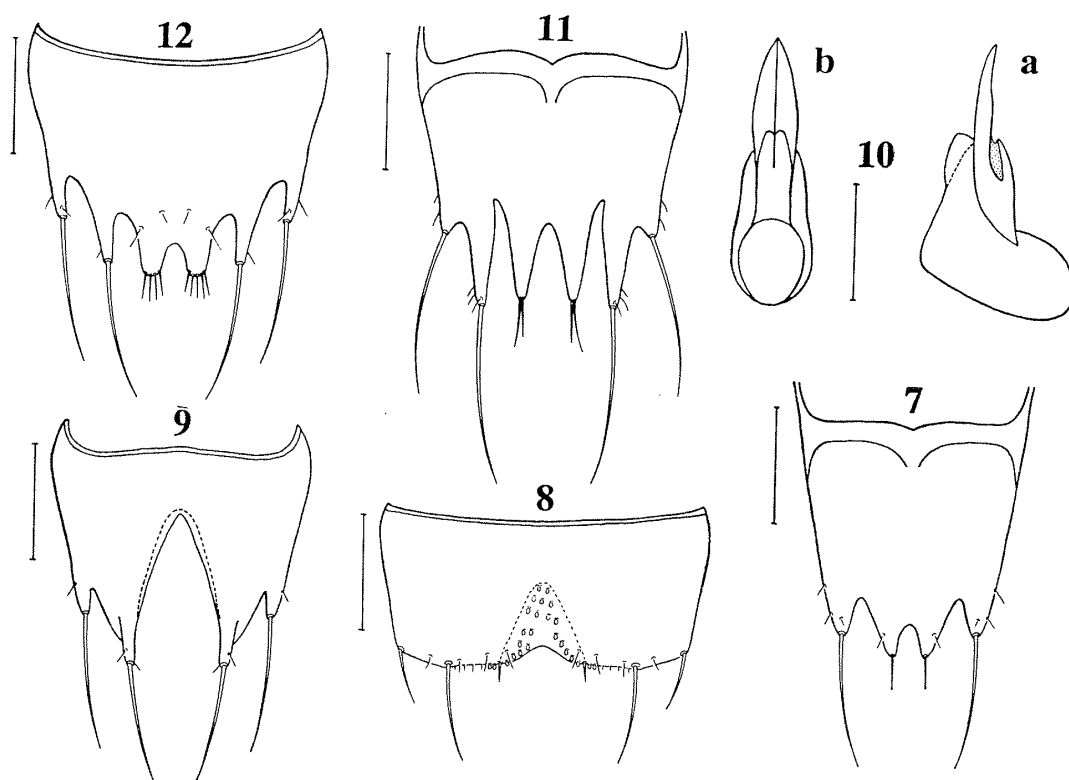
Tachinus (Tachinoderus) iriomotensis sp. nov.

(Figs. 7–12)

Length: 1.8–2.1 mm (from the anterior margin of labrum to the apices of elytra); width: 1.1–1.3 mm.

Male. Body small, oval, shining. Color brown to reddish brown; bases and apices of antennae, mouthparts, legs, margins of pronotum, posterior margins of elytra and posterior margins of tergites reddish yellow to reddish brown.

Head small, about 0.56 times as wide as pronotum; surface very finely punctate, without microsculpture except at the base, which is minutely microsculptured. Eye moderately large and convex; ocular seta reduced. Antenna long, exceeding the



Figs. 7–12. *Tachinus (Tachinoderus) iriomotensis* sp. nov. — 7, Male 8th tergite; 8, male 7th sternite; 9, male 8th sternite; 10, male genitalia (a, lateral view; b, ventral view); 11, female 8th tergite; 12, female 8th sternite. (Scale: 0.25 mm).

posterior margin of pronotum; 1st and 2nd segments glabrous except for a few long setae, 3rd segment slightly, 4th segment sparsely, and 5th to 11th segments densely pubescent; relative length of each segment from base to apex: 14: 11: 11: 8: 8: 9: 8: 8: 8: 8: 13; 10th segment a little wider than long (length/width=0.89). Maxillary palpus somewhat long, with relative lengths of 4th and 3rd segments: 7: 3.

Pronotum about 0.57 times as long as wide, widest near basal third; anterior margin bisinuate; lateral margins arcuate from base to apex; posterior margin slightly and roundly produced; posterior angles rounded; surface with very fine punctures, but the punctures are distinctly coarser near posterior margin; microsculpture absent. Scutellum parabolic, minutely punctate and microsculptured.

Elytra in sutural length about 1.33 times as long as the median length of pronotum, 0.68 times as long as wide, widest near basal third; sides slightly convergent towards apices; posterior conjoint margins shallowly emarginate at the middle; apical angles somewhat rounded; surface very coarsely punctate, without microsculpture.

Abdomen triangular, narrowed from base to apex; surface sparsely and evenly covered with fine pubescence; punctures much finer than those on elytra, microsculpture reduced, obscurely visible only at the bases of 3rd, 7th and 8th tergites; pruinose spots absent. Third sternite armed with a short longitudinal keel at base.

Legs moderately long; anterior tibia about 0.71 times as long as femur; protarsal segments 1-4 dilated.

Eighth tergite (Fig. 7) 4-lobed. Seventh sternite (Fig. 8) triangularly impressed at middle in posterior part; apical margin shallowly emarginate at the middle; granules sparse, scattered at the base and near the sides of triangular impression. Eighth sternite (Fig. 9) with apical margin very deeply emarginate, the depth about 0.72 times as long as the length of the sternite, and the base of the emargination devoid of lateral setae; inner lobes moderately long, somewhat narrowed apically, outer lobes small. Genitalia (Fig. 10) with median lobe strongly convex dorsad at middle and forming a right angle, gradually tapered apicad; lateral lobes long, narrow, ventrally barnching at middle, gradually tapered towards apices.

Female. Eighth tergite (Fig. 11) 6-lobed, apical margin between inner lobes deeply and triangularly emarginate, intermediate lobes a little longer than inner lobes, outer lobes rather developed. Eighth sternite (Fig. 12) with inner lobes separated by a U-shaped emargination, fimbriate and rounded at apices, each about 3 times as wide as intermediate lobe in apical width.

Type series. Holotype: ♂, allotype: ♀, Kampira, Iriomote Is., Okinawa Pref., 14. IV. 1986, S. NOMURA leg. Paratypes: 7 ♂♂, 4 ♀♀, same data as for the holotype; 2 ♀♀, same locality as for the holotype, 2. IV. 1982, S. TANAKA leg.; 1 ♂, 5 ♀♀, Kampiree, Iriomote Is. Okinawa Pref., 27. III. 1984, S. NOMURA leg.; 2 ♂♂, Mt. Omotodake, Ishigaki Is., Okinawa Pref., 20. III. 1978, S.-I. NAOMI leg.; 5 ♂♂, 2 ♀♀, same locality as above, 8. VI. 1983, S. IMASAKA leg.; 4 ♂♂, 3 ♀♀, same locality as above, 9. IV. 1986, S. NOMURA leg.

Distribution. Japan (Iriomote Is., Ishigaki Is.)

Remarks. This new species is closely allied to *Tachinus nepalensis* ULLRICH, 1975 from Nepal, but can be distinguished from the latter by the following points: pronotum without microsculpture; median lobe of male genitalia strongly convex dorsad. It is also similar to *T. grandicollis* CAMPBELL, 1993 from Taiwan, but the female 8th tergite lacks tooth at the base of the emargination between inner lobes, and bears much larger outer lobes.

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